What is claimed is;

1. A method of overload-controlling an inverter power generation apparatus comprising an AC generator driven by an internal combustion engine, a rectifier to rectify an output of said AC generator and an inverter to convert an output voltage of said rectifier into an AC voltage of constant frequency, said method comprising steps of stopping an operation of said inverter immediately when a value of an overload current flowing through said inverter exceeds an allowable threshold value by comparing the value of said load current with said allowable threshold value and at least one overload judgment value set to be smaller than said allowable threshold value and also stopping the operation of said inverter being stopped when a time set in accordance with said overload judgment value elapses after said load current exceeds said overload judgment value in the state where said load current is equal to or less than said allowable threshold value, but exceeds said overload judgment value.

2. A method of overload-controlling an inverter power generation apparatus comprising an AC generator driven by an internal combustion engine, a rectifier to rectify an output of said AC generator and an inverter to convert an output voltage of said rectifier into an AC voltage of constant frequency, said method comprising steps of determining a first overload judgment value for a load current flowing through said inverter and a second overload judgment value larger than said first overload judgment value, determining a short circuit judgment value for an output voltage of said inverter, further determining a first setting time and a second setting time having a length set in accordance with said output voltage of said inverter, starting a measurement of an overload continuation time when it is detected that said load current exceeding said first overload judgment value flows through said inverter and judging whether the value of said load current

exceeds said second overload judgment value and whether said output voltage of said inverter is equal to or less than said short circuit judgment value whereby the operation of said inverter is stopped immediately when said load current exceeds said second overload judgment value and said output voltage of said inverter is equal to or less than said short circuit judgment value, the operation of said inverter is stopped when said overload continuation time exceeds said first setting time in case that said load current is equal to or more than said first overload judgment value and is equal to or less than said second overload judgment value and the operation of said inverter is stopped when said overload continuation time exceeds said second setting time in case that said overload current exceeds said second overload judgment value and said output voltage of said inverter exceeds said short circuit judgment value wherein said second setting time is so set as to get shorter as said output voltage of said inverter is lower.

3. A method of overload-controlling an inverter power generation apparatus as set forth in claim 2 and wherein said first overload judgment value is the minimum value of said overload current allowed to flow through said inverter for said first setting time.

4. A method of overload-controlling an inverter power generation apparatus as set forth in claim 2 and wherein said first overload judgment value is the minimum value of the overload current allowed to flow through said inverter for said first setting time and said second overload judgment value is the maximum value of said overload current allowed to flow through said inverter for said first setting time.

5. A method of overload-controlling an inverter power generation apparatus as set forth in claim 2 and wherein said first setting time is so set at a constant value in spite of the value of said load current.

6. A method of overload-controlling an inverter power generation

apparatus as set forth in claim 2 and wherein said first setting time is so set as to get shorter as said load current is larger.

7. A method of overload-controlling an inverter power generation apparatus as set forth in claim 2 and wherein said short circuit judgment value is so set at a value smaller than the minimum value of a voltage across a load when said load across output terminals of said generation apparatus is in the transition state when it starts.

8. An overload control apparatus for overload-controlling an inverter power generation apparatus comprising an AC generator driven by an internal combustion engine, a rectifier to rectify an output of said AC generator and an inverter to convert an output voltage of said rectifier into an AC voltage of constant frequency and to supply it to a load, said overload control apparatus comprising a load current detector to detect a load current flowing through said inverter, an instant stop command generation circuit to generate a stop command to instruct said inverter to be stopped immediately when the value of said load current detected by said load current detector is compared with an allowable threshold value and said load current exceeds said allowable threshold value, at least one overload stop command generation circuit to perform a time interval operation for a time set in accordance with the value of said overload judgment value when the value of said load current detected by said load current detector is compared with the overload judgment value set at a value smaller than said allowable threshold value and it is detected that said load current exceeds said overload judgment value and to generate a stop command to instruct said inverter to be stopped when said time interval operation is completed and inverter stop means to stop the operation of said inverter when said stop command is generated from either of said instant stop command generation circuit and said overload stop command generation circuit.

9. An overload control apparatus for overload-controlling an inverter power generation apparatus comprising an AC generator driven by an internal combustion engine, a rectifier to rectify an output of said AC generator and an inverter to convert an output voltage of said rectifier into an AC voltage of constant frequency and to supply it to a load, said overload control apparatus comprising a load current detector to detect a load current flowing from said inverter through said load, overload signal generation means to generate an overload signal when the value of said load current detected by said overload current detector gets equal to or more than a first overload judgment value, overload continuation time measurement means to measure an overload continuation time corresponding to an elapse time after said overload signal is generated, overload current judgment means to judge whether said load current exceeds a second overload judgement value set at a value larger than said first overload judgment value when said overload signal is generated, short circuit judgment means to judge whether the output voltage of said inverter is equal to or less than a set short circuit judgment value when it is judged by said overload current judgment means that said load current exceeds said second overload judgment value, short circuit inverter protection means to stop the operation of said inverter immediately when it is judged by said short circuit judgment means that the output voltage of said inverter is equal to or less than said short circuit judgment value and overload inverter protection means to stop the operation of said inverter when said overload continuation time exceeds a first setting time in the state where it is judged by said overload current judgment means that the value of said load current is equal to or more than said first overload judgment value and is equal to or less than said second overload judgment value and when said overload continuation time exceeds a second setting time set in accordance with said output voltage of said inverter in the state where it is judged by said

overload current judgment means that the value of said load current exceeds said second overload judgment value and it is judged by said short circuit judgment means that said output voltage of said inverter is higher than said short circuit judgment value wherein said second setting time is so set as to get shorter as said output voltage of said inverter gets lower.

10. An overload control apparatus for an inverter power generation apparatus as set forth in claim 9 and wherein said first overload judgment value is the minimum value of the overload current allowed to flow through said inverter for said first setting time.

11. An overload control apparatus for an inverter power generation apparatus as set forth in claim 9 and wherein said first overload judgment value is the minimum value of the overload current allowed to flow through said inverter for said first setting time and said second overload judgment value is the maximum value of the overload current allowed to flow through said inverter for said first setting time.

12. An overload control apparatus for an inverter power generation apparatus as set forth in claim 9 and wherein said first setting time is so set at a constant value in spite of the value of said load current.

13. An overload control apparatus for an inverter power generation apparatus as set forth in claim 9 and wherein said first setting time is so set as to get shorter as said load current is larger.

14. An overload control apparatus for an inverter power generation apparatus as set forth in claim 9 and wherein said short circuit judgment value is so set at a value smaller than the minimum value of a voltage across said load when said load across output terminals of said power generation apparatus is in the transition state when it starts.